

Preventive Action Report

Printed on:

Wednesday, June 19, 2013

Details			
Raised Date 8/27/2012	Status Open	Owner Petsche, Mike	Number PAR12-218
Target Date 8/31/2012	Standard		Severity
Process Work Order NCR		Audit	
Raised By Person Paquette, Daniel	Raised Against (Department or Supplier) Engineering		Fault Category General\Drawing
Details On D2580 skid tube assembly; D2580-047 'Assembly' shows an extra hole that is not required. On D2580-7 'Drilling' there is no extra hole. Also, the qty of spacers D4202-1 should be 24 (not 25). See attached copies from w/o 82860.			
Product D205-634\D2580			
Document		Root Cause Design	
Closed By	Closed Date	Resolution Drawing Revised	

Corrective Action			
Target Date 8/30/2012	Owner Petsche, Mike	Closed Date	Closed By
Details			

Actions			
Number	Owner	Target Date	Completed Date
Details		Response	
1	Petsche, Mike	10/31/2012	
Revise drawing and incorporate all DEO's.			

Verification & Review			
Target Date 8/31/2012	Owner	Closed Date	Closed By
Details			

Actions

Number	Owner	Target Date	Completed Date
Details	Response		

Work Order ID 82860

82860

Page 1

April-10-12 2:33:14 PM

Item ID: D205-634-141

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Replacement Skidtube

Stop *NS2*

Start Date: 10/04/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 24/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/04/10 Tooling:

Date:

Run Start *NR1*

QC: Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D2580-047	(DEO) revE
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100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile & type labels per PPP D205-634-141 CHG003

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Work Order ID 82860

82860

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April-10-12 2:33:14 PM

Item ID: D205-634-141

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N9000040100

Setup Start ***NS1***

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Start Date: 10/04/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 24/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

1- Inspect mat'l D2500-1-190 for damage

2-Cut D2500-1-190 per Dwg D2580 if necessaryDeburr ends

3-Drill pilot holes using DT8149, drill #30 hole (3.630 REF) using DT8149 and SPOT drill #30 (5.338 & 5.985 REF) using DT8149. Open holes to finished size except for (4) AFT spot drilled holes as per dwg D2580 sheet 7.

4-Drill pilot holes using drill jig DT 8149 and open holes to finish size

5-Acid etch and Alodine tube per QSI 005 4.1

6- Install web as per dwg using sikaflex

A/R Sikaflex Batch #: 122443

120

0.00

120

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio FT 16

2-Cut tubes as per Dwg. D2580

3- Scribe batch# in aft end of tube

Handwritten notes and signatures:
12-8-27
2/6 12-8-28
B 12/08/28

Handwritten notes:
1 0 12.8.29

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Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Skidtubes	0.00							
130									
Skidtubes	Memo	0.00							
Skidtubes	1-Deburr ends after cutting and remove bending marks. Prepare tube for welding D2576-3 step remove alodine as required.								
	2-Locating from most fwd saddle hole, drill most fwd wearplate hole using DT9793 (10.832 REF) as per dwg D2580 sheet 7.								
	3-Open run-on wearplate holes to finished size at locations (5.338/ 5.985/ 10.832 REF) as per dwg D2580 sheet 7.								
	4-Drill pilot holes for aft cap using DT8215, Open to finished size.								
140	QC5- Inspect part completeness to step on W/O	0.00							
140									
QC	Memo	0.00							
Quality Control									

CF 12.8.29

1 0 12.8.29



W/O:		WORK ORDER CHANGES					
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Item Name: Replacement Skidtube

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Start Date: 10/04/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 24/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start *NR1*

QC: Date: SPC (Y/N): Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

0.00

150

Skidtubes

Skidtubes

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004
A/R Aluminum Rod

2-Touch up alodine on run on wearplate holes prior to swaging

3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and as per dwg

160

0.00

160

QC

QC10- Inspect visual per QSI004- ground welds

Paul Caporin

Memo

0.00

Quality Control

170

0.00

170

QC

QC5- Inspect part completeness to step on W/O

Memo

0.00

Quality Control

CF 12-8-30

DAS 16

12/08/30

DAS 16

12/08/30

W/O:		WORK ORDER CHANGES					
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Revision ID:

Item Name: Replacement Skidtube

Stop *NS2*

Start Date: 10/04/2012 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 24/04/2012 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180 Pressure Wash per QSI005 4.3

0.00

180

HandFinish

Memo

0.00

Hand Finishing

And realodine tube as per QSI 005

1 76 128.31

190 White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

190

Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

7:30
320°F
8:00

IX 12/09/04

W121841

200 QC3- Inspect Part Finish

0.00

200

QC

Memo

0.00

Quality Control

1 8 SP 12/09/05

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Work Order ID 82860***82860***

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N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 10/04/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 24/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

Assemble as per dwg

0.00

210

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 122443Sikaflex expire date: 13/03

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594

3- Install aft cap as per dwg

4- Wing walk as per dwg Batch# 1223201 0 OP 12/09/05

220

QC5- Inspect part completeness to step on W/O

0.00

220

QC

Memo

0.00

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

DAS 12/09/05

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Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 10/04/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 24/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230		0.00							
230	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPPD205-634-141								
	Location: _____								
	PPP Rev: _____								
240		0.00							
240	QC21- Final Inspection - Work Order Release								
QC	Memo	0.00							
Quality Control									

PPP 2 853

12/09/10

12/09/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

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Page 1

Work Order ID: 82860

82860

Parent Item: D205-634-141

D205-634-141

Parent Item Name: Replacement Skidtube

Start Date: 10/04/2012

Required Date: 24/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA 11.09.14 new issue EC verified by:DD
12.01.23 AS PER ECN11-684 DD VERF:EC

IPP REV:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2500-1-190

Manufactured

No

110

Each

100.0000

1

1

D2500-1-190

Ext'n -1' Beam Tube 4"

**

DP 12-8-27

Location

Loc Qty

Loc Code

HALL

100

74777

20

80061

80

D2596

Manufactured

No

110

Each

10.0000

1

1

D2596

Web, 205 Skidtube

**

BB 12/08/28

Location

Loc Qty

Loc Code

LG

10

80185

2

80820

1

81847

1

81848

4

82323

2

D4202-1

Manufactured

No

150

Each

290.0000

24

24

D4202-1

Spacer

**

(24) CF 12-8-30

85453
87948

Location

Loc Qty

Loc Code

LG

5

77727

5

LG002

285

78806

6

79810

279

12

12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 2

Work Order ID: 82860

Parent Item: D205-634-141

Parent Item Name: Replacement Skidtube

82860

D205-634-141

Start Date: 10/04/2012

Required Date: 24/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN4-45A

Purchased No

210 Each

114.0000 8 8

AN4-45A

Bolt

**

8

(28)

12/09/05

Location

Loc Qty

Loc Code

ST350A 121444✓
118926
121162

114
64
50

D2570

Manufactured No

210 Each

125.0000 16 16

D2570

Bushing

**

16

(28)

12/09/05

Location

Loc Qty

Loc Code

ST011 88781✓
72960
78586
78587
79493

125
41
9
42
33

D4406-041

Manufactured No

210 Each

2.0000 1 1

D4406-041

Fwd Wearplate Assembly

**

1

(28)

12/09/05

Location

Loc Qty

Loc Code

Return2012

2

74147
82882✓

2

D4406-043

Manufactured No

210 Each

5.0000 1 1

D4406-043

Aft Wearplate Assembly

**

1

(28)

12/09/05

Location

Loc Qty

Loc Code

FP001 82886✓
80757

3
3

Return2012

2

74148

2

April-10-12 2:33:17 PM

Shop Packet Print

Page 2

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item: D205-634-141

Parent Item Name: Replacement Skidtube

82860

D205-634-141

Start Date: 10/04/2012

Required Date: 24/04/2012

Start Qty: 1.00

Required Qty: 1.00

MS21042-4

Purchased

No

210

Each

1,137.000

8

8

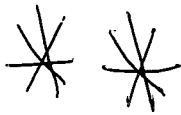
MS21042-4

USE MS21042L4

**

8

12/09/05



Location

Loc Qty

Loc Code

ST299

122452✓

1137

100743

9

119124

1000

5461

3

6844

19

7690

24

8182

70

9063

8

9229

4

D2576-3

Manufactured

No

150

Each

35.0000

1

1

D2576-3

Step (maching detail)

**

BE 12/03/29
B 82257 c1

Location

Loc Qty

Loc Code

LG

35

74136

35

D2855

Manufactured

No

210

Each

41.0000

1

1

D2855

Cap

**

1

12/09/05

Location

Loc Qty

Loc Code

FP002

41

65519

2

73347

29

75074

10

84952✓

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Shop Packet Print

Page 3

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Work Order ID: 82860

Parent Item: D205-634-141

Parent Item Name: Replacement Skidtube

82860

D205-634-141

Start Date: 10/04/2012

Required Date: 24/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN3-5A Purchased No

210 Each

1,536.000 2 2

AN3-5A

Bolt

**

2 28 12/09/05

Location

Loc Qty

Loc Code

ST350

1536

115371

46

117423

124

118626

166

119355

200

120187 ✓

500

121185

500

AN960JD10L

*NAS1149D0332Jt ✓ Purchased

No

210 Each

0.0000 2 2

*AN960.ID10I *

Washer

D2594-3

Manufactured No

210 Each

2,674.000 8 8

D2594-3

O-Ring, 205 Skidtube

**

8 28 12/09/05

Location

Loc Qty

Loc Code

FP001

2674

65518

41

79496

984

79573

50

79755 ✓

1599

W/O:		WORK ORDER CHANGES					
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Parent Item: D205-634-141

D205-634-141

Parent Item Name: Replacement Skidtube

Start Date: 10/04/2012

Required Date: 24/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2594-1

Manufactured No

210

Each

567.0000

8

8

D2594-1

Plug, 205 Skidtube

**

8

29

12/09/05

Location

Loc Qty

Loc Code

FP001

85454✓

322

73401

30

74442

34

79495

258

FP-A

245

73401

0

78590

245

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Shop Packet Print

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LIST OF MATERIALS					
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
27			8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.2
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241-1291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

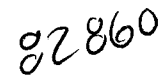
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2011-08-29
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

82260 MLJ
12/04/10

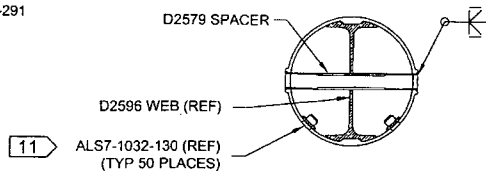
E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS T02577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. E
CHECKED	10	D2580	SHEET 1 OF 8
MFG. APPR.	10	TITLE	SCALE
APPROVED	10	205 SKIDTUBE ASSEMBLY	NTS
DE APPR.	10	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	11.06.21		



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RELEASE
2011-08-29

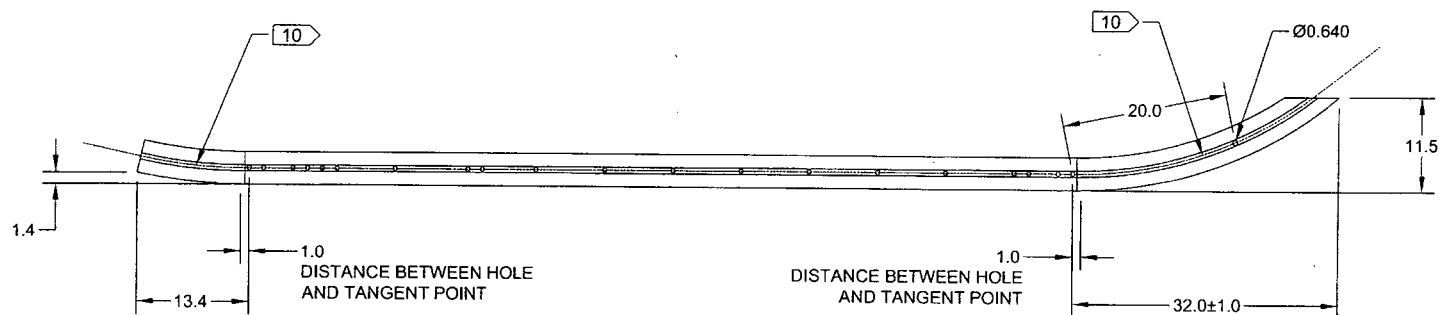
DETAIL C D3-2
SCALE 5X



-
- Diagram illustrating the location of the D2576-3 step and the grinding and flushing locations. The diagram shows a cross-section of a component with a central cavity. The D2576-3 step is indicated by a line pointing to the top edge of the cavity. The grinding and flushing locations are marked with 'GRIND FLUSH' labels and arrows pointing to the top and bottom edges of the cavity. A 'LOCATION RIDGE ON UNDERSIDE OF D2576-3' is also indicated. A dimension of 1/4 is shown at the bottom right corner.

DESIGN	4	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 2 OF 4
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NT
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE FORTRESS CONDITION THAT IT NOT BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE LTD	

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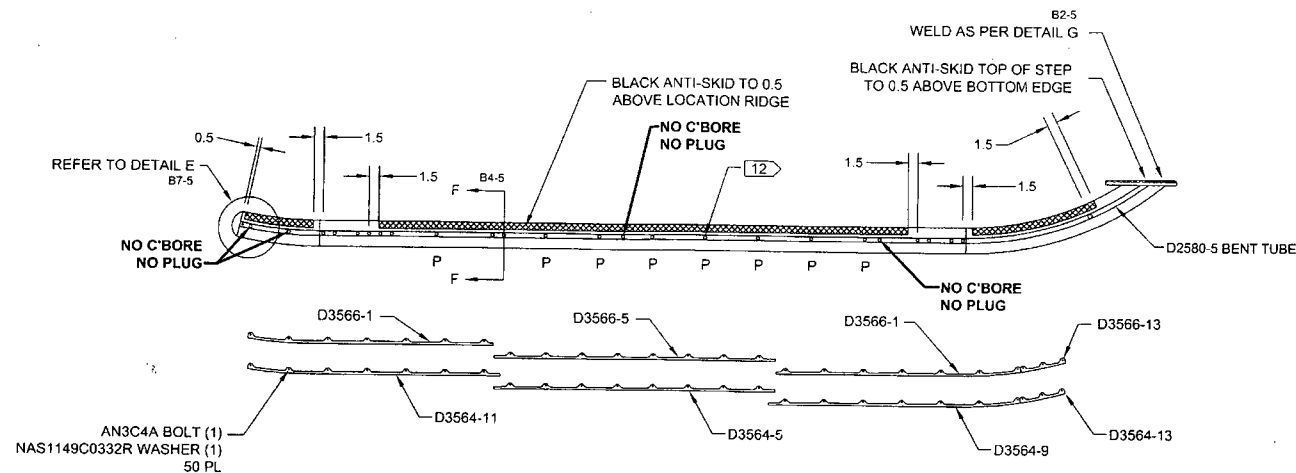
D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2011-08-28

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	AS	D2580	SHEET 3 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	205 SKIDTUBE ASSEMBLY	NTS
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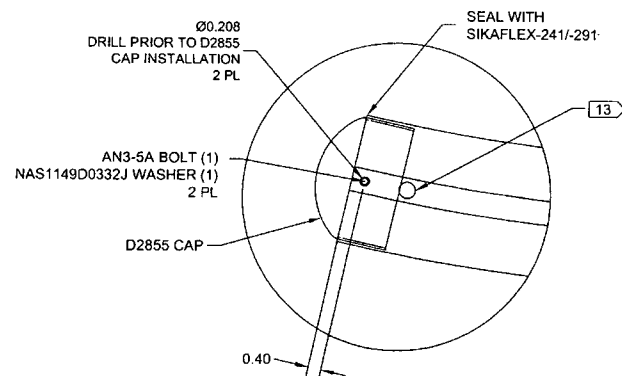
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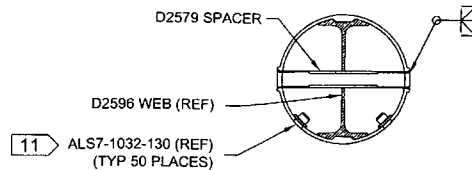
D2580-045 ASSEMBLY DETAIL

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2011-08-29

DETAIL E D7-5
SCALE 5X

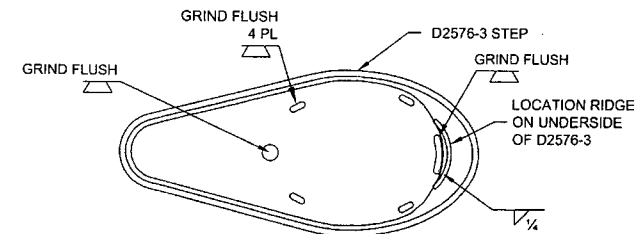


SECTION F-F D5-5
SCALE 5X



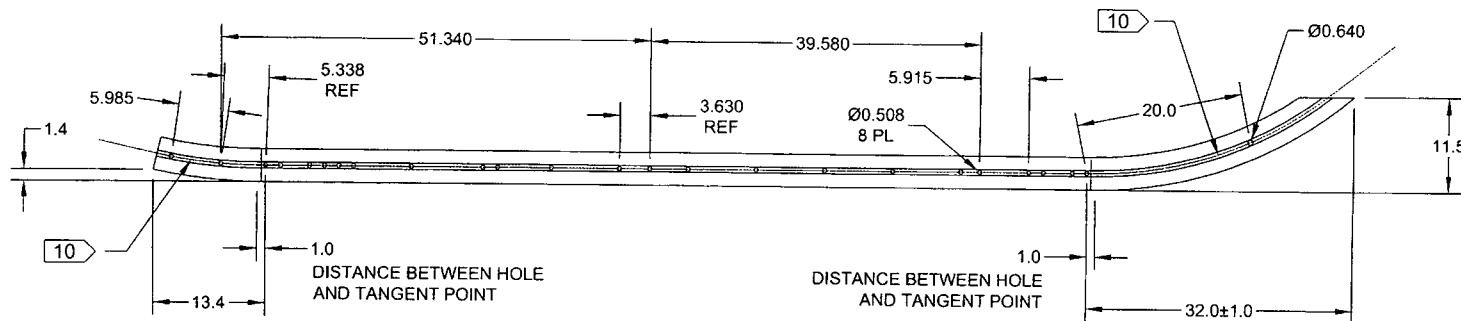
- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
 2. INSERT D2579 SPACER (24 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL G D3-5
SCALE 5X



DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	AP	D2580	SHEET 4 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	205 SKIDTUBE ASSEMBLY	NTS
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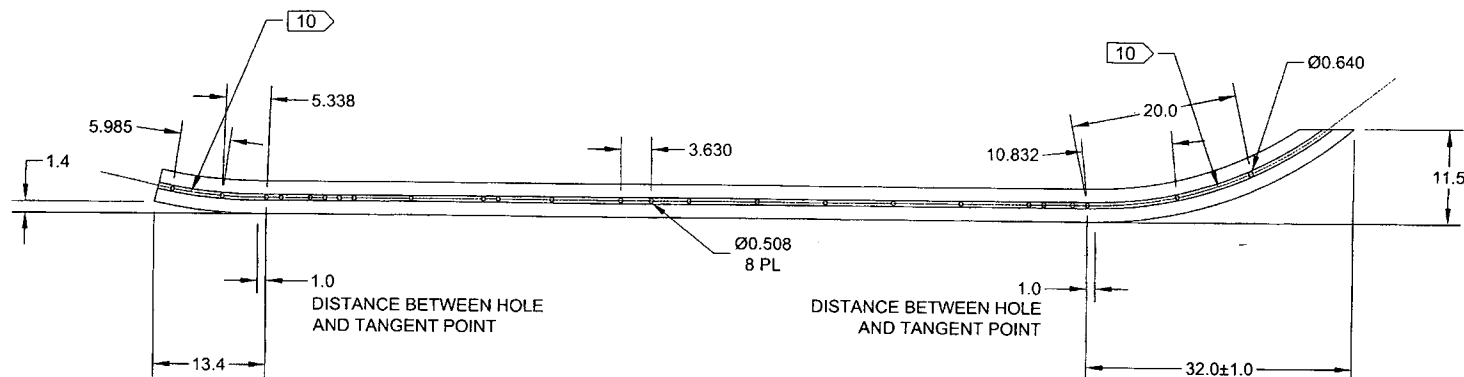
D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2011-08-29

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	RF	D2580	SHEET 5 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	205 SKIDTUBE ASSEMBLY	NTS
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"drilling"

D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)

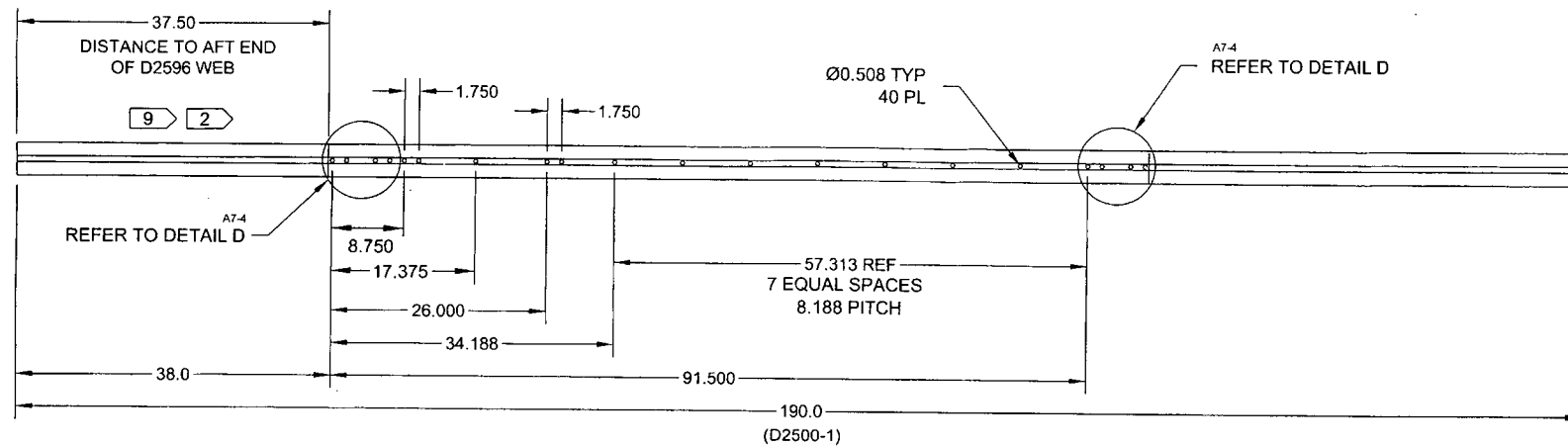


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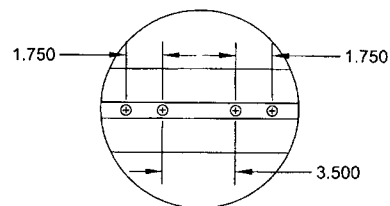
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2011-08-29

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 7 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
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D2580-101 TUBE



DETAIL D D3-4
C7-4
SCALE 5X

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R 2011-08-29
W

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	14	DRAWING NO.	REV. E
MFG. APPR.	14	D2580	SHEET 8 OF 8
APPROVED	14	TITLE	SCALE
DE APPR.	14	205 SKIDTUBE ASSEMBLY	NTS
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DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>ER</i>	APPROVED <i>#</i>		DE APPR. <i>#</i>		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13		DATE 11.12.13		

PURPOSE:

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

82860

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

QTY	QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045	-047		
20	24	25	D2579	CROSS BOLT SPACER

IS

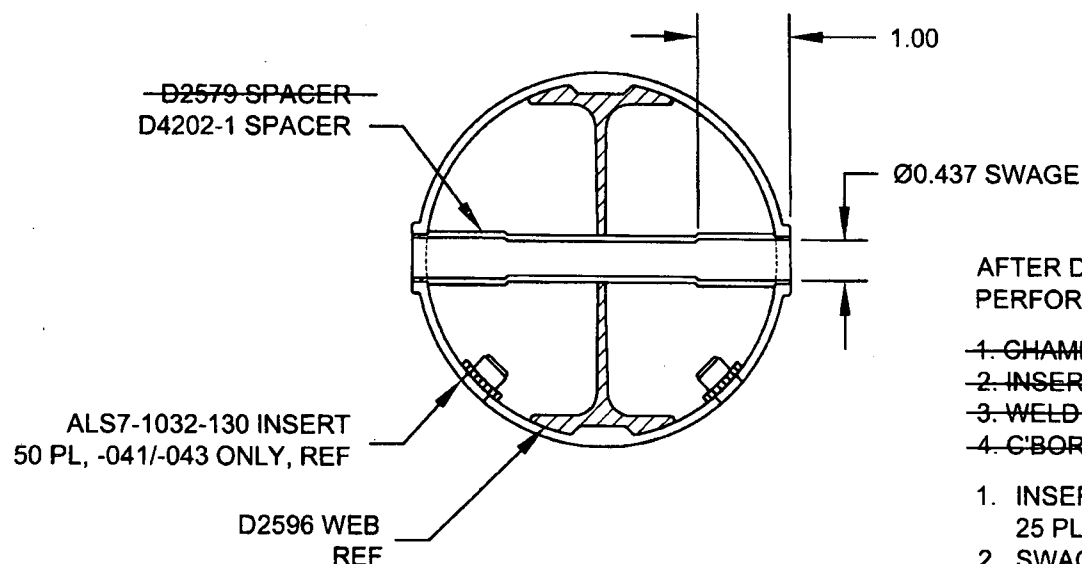
	4		* D2579	CROSS BOLT SPACER
20	20	25	D4202-1	SPACER

* FOR -045 SKIDTUBE ONLY:

WELD 4X D2579 SPACERS PER DWG
IN LOCATIONS MARKED "NO C'BORE".
REF SHEET 4 OF DWG.

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

RELEASED
2011-12-14



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT ~~D2579 SPACER (20 PLACES)~~
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE ~~D2579 SPACER TO Ø0.437 X 1.00 DEEP~~
1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B, F-F, I-I
NOT TO SCALE